

DaimlerChrysler AG

Hardtop cabriolet

5 The invention relates to a hardtop cabriolet according to the type defined in more detail in the precharacterizing clause of claim 1.

10 A cabriolet of the generic type with a hardtop which has three roof parts is known, for example, from DE 101 33 957 A1. In this case, the front roof part is put away, in the open roof position, in the trunk of the vehicle between the central and the rear roof parts, the front roof part being raised over the  
15 central roof part by means of a corresponding lever arrangement during the putting-away movement.

DE 199 62 070 A1 also shows a similar prior art, in which the front roof part is likewise raised over the  
20 central roof part. However, in the put-away state, the front roof part comes to lie right at the top.

DE 196 42 153 A1 describes a motor vehicle with a retractable roof which likewise has three roof parts.  
25 In this case, the front roof part is folded in an articulated manner and is put away in the trunk between the central roof part and the rear roof part.

A similar folding-in of the front roof part is also  
30 described in DE 93 07 481 U1, but with the front roof part coming to lie right at the bottom.

DE 197 51 660 C1 discloses a device for putting away the roof construction of a hardtop vehicle, in which a  
35 front roof part and a rear roof part are provided. The rear roof part has a rear window which is pivoted relative to the rear roof part by means of a lever and a joint during the putting-away movement of the two

roof parts and is put away in an opposed direction to said rear roof part.

Rotation of the rear window in such a manner is also  
5 known from DE 198 07 490 C1. However, in this case the rear window is merely rotated through an angle of approx. 15° and is therefore put away essentially in the same direction as the rear roof part.

10 DE 101 16 709 A1 also discloses the movement of a rear window in relation to the rear roof part. However, in this case the rear roof part has an additional roof segment which likewise has to be pivoted, so that a very complicated construction and a correspondingly  
15 complicated putting-away movement arise.

In the case of all of the described roof systems with three roof parts, there is the fundamental problem that, in the open roof position in which all of the  
20 roof parts are located in the trunk, considerable restrictions with regard to the volume of the trunk have to be accepted.

It is therefore the object of the present invention to  
25 provide a cabriolet with a hardtop with at least three roof parts, in which the hardtop requires as little space as possible when put away in the trunk.

According to the invention, this object is achieved by  
30 the features mentioned in claim 1.

By means of the articulated mounting of the rear window in relation to the C-pillars and the resultantly caused pivoting of the same, as a result of which the rear  
35 window comes to lie with its curvature in the same direction as the central roof part, a considerable amount of space is saved in the region between the C-pillars of the rear roof part, thus also providing

very much more space for luggage in the open roof position.

5 The volume of the trunk in the open roof position is furthermore increased by the fact that the front roof part comes to lie in a very space-saving manner either along a backrest or along a motor vehicle tank rather than being in an arrangement together with the rear and the central roof parts one above another. The result is  
10 therefore a cabriolet which provides its passengers with sufficient luggage space even in the open state of the roof.

15 A particular advantage of the invention can be seen in its comparatively simple construction with a correspondingly uncomplicated configuration of the components.

20 Advantageous refinements and developments of the invention emerge from the subclaims and from the exemplary embodiments illustrated in principle below with reference to the drawing, in which:

25 fig. 1 shows a first embodiment of the hardtop cabriolet according to the invention; and

fig. 2 shows a second embodiment of the hardtop cabriolet according to the invention.

30 Fig. 1 shows a cabriolet 1 with a hardtop 2 which has three roof parts, namely a front roof part 3, a central roof part 4 and a rear roof part 5. In this case, the rear roof part 5 comprises a rear window 6 and two C-pillars 7 of which just one can be seen in the side  
35 view according to fig. 1.

The hardtop 2 is illustrated in two positions in fig. 1, namely in a closed roof position, in which the

hardtop 2 and the roof parts 3, 4 and 5 extend from a windshield 8 to a trunk 9 which has a trunk lid 9a. The second position is formed if the roof parts 3', 4' and 5', which are referred to here by a', are located in the trunk 9 and therefore an open roof position is produced.

The movement of the hardtop 2 between the closed roof position and the open roof position takes place by means of a displacing device which is not illustrated but is known per se, the roof parts 3, 4 and 5 being connected to one another in an articulated manner. In the open roof position, the rear roof part 5' and the central roof part 4' come to lie one above the other, with the rear roof part 5' being arranged below the central roof part 4' in the present case.

The rear window 6 is mounted in an articulated manner in relation to the C-pillars such that it is pivoted in relation to the C-pillars 7 during the movement of the roof parts 3, 4 and 5 and, as indicated by the position of the rear window 6', comes to lie with its curvature in the same direction as the central roof part 4'. As a result, only the C-pillars 7' of the rear roof part 5' are located in a lower position but, owing to the position of the C-pillars 7' on the two sides of the trunk 9, only a very small amount of space is taken up within the trunk 9 as a result.

In order to be able to load as much luggage as possible into the trunk 9, in the case of the embodiment according to fig. 1, the front roof part 3' comes to lie outside the arrangement of the rear roof part 5' with the central roof part 4' along a backrest 10 of a rear seat bench 11 of the cabriolet 1. The front roof part 3' is therefore located between the backrest 10 and a motor vehicle tank 12. Of course, the motor vehicle tank 12 may also be located at a different

point within the cabriolet 1.

The embodiment of the hardtop 2 according to fig. 2 is very similar to that according to fig. 1, with the open  
5 roof position being indicated by ''. Thus, the rear roof part 5'', the central roof part 4'' and the rear window 6'' and the C-pillars 7'' are located in the same position as in the case of fig. 1. By contrast, the front roof part 3'' again comes to lie outside the  
10 arrangement of the rear roof part 5'' with the central roof part 4'' but along the motor vehicle tank 12 and behind the same in the direction of travel.

In this case, the shape of the motor vehicle tank 12  
15 can be matched to the shape of the front roof part 3 in order to achieve a volume of the motor vehicle tank 12 which is as large as possible.

The displacing device can have a plurality of rotary  
20 drives which are arranged in each case on the articulated connections between the roof parts 3, 4 and 5. This assists the exact putting-away of the front roof part 3 into the intermediate space between the backrest 10 and the motor vehicle tank 12 in the case  
25 of fig. 1 or along the motor vehicle tank 12 in the case of fig. 2.

As an alternative, it is also possible for the displacing device to have a driving device, such as,  
30 for example, an electric motor or a plurality of hydraulic cylinders, and for the roof parts 3, 4 and 5 to be connected to one another via respective lever arrangements (not illustrated).

35 The two embodiments according to fig. 1 and fig. 2 illustrate different cabriolets 1, and, for reasons of saving space, it is not envisaged allowing the driver of the cabriolet 1 to select whether he would like to

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put away the front roof part 3 along the backrest 10 or  
along the motor vehicle tank 12 when opening the  
hardtop 2.